

ST. LOUIS.

Academy of Science, May 23.—A paper by Dr. Adolf Alt, entitled "Original contributions concerning the glandular structures appertaining to the human eye and its appendages," was presented by title.—Dr. M. A. Goldstein read a paper on the physiology of voice production, in which he discussed three essential factors in the production of voice—the motor force, the organ of sound, and the resonators.—Prof. F. E. Nipher read a short communication on the zero photographic plate, to which reference was made at the meeting of May 7 (see pp. 62, 159). The zero plate is one upon which a photographic image has been made, but which will develop no image in a bath placed in light of given candle power, at a distance of one metre from the source. For example, if the developing bath is twenty centimetres from a sixteen candle lamp, a Cramer isochromatic plate, such as is called "instantaneous," held for ninety seconds at a distance of one metre from the lamp, will be a zero plate. With an opaque stencil over the plate when placed in a printing frame during the exposure, there will develop a positive of holes through the stencil, if the exposure is longer, and a negative if the exposure is shorter. If a fresh plate is exposed in our camera with full opening to a brilliantly lighted street scene for one minute, it will develop as a positive in that same bath. This time can be somewhat reduced, but the least time needed has not yet been determined. It is evident that part of this minute is used in producing a zero plate. It is furthermore clear that different parts of the plate will arrive at the zero condition at different times. The exposure may be arrested at a time when the strongly lighted white background of a sign-board will develop white as a positive, and when the black letters will also show white as a negative. It has been found that when a plate is uniformly exposed over its whole surface to the extent that nothing would have developed had it been covered by a stencil, this plate may then be placed in a camera and exposed in the ordinary way, and a perfect positive will develop in the bath to which it has been adapted. This preliminary spoiling of the plate for developing a negative is a very advantageous preparation for taking a positive. It shortens the time of exposure, and ensures that a positive shall be obtained over all parts of the plate. It is not yet known how short the camera exposure may be made, but the present indications are that they will be as short as those now made in the taking of negative pictures. It is currently believed by photographers that in a positive plate the object has "printed its picture" upon the plate. This appears to be a misconception of the process. It is true that in an exposure of long duration an image shows on the plate before it is placed in the bath. But this image is blackest where the light has acted most. It is a negative. This picture disappears in the developing bath when illuminated. The plate becomes perfectly clean. The positive picture then develops exactly as a negative would under ordinary conditions.—Mr. J. B. S. Norton presented some notes on the flora of the south-western United States

DIARY OF SOCIETIES.

THURSDAY, JUNE 21.

ROYAL SOCIETY, at 4.30.—On the Effects of Changes of Temperature on the Elasticities and Internal Viscosity of Metal Wires: Prof. A. Gray, F.R.S., V. J. Blyth, and J. S. Dunlop.—On the Connection between the Electrical Properties and the Chemical Composition of Different Kinds of Glass, Part II.: Prof. A. Gray, F.R.S., and Prof. J. J. Dobbie.—On the Change of Resistance in Iron produced by Magnetisation: Prof. A. Gray, F.R.S., and Prof. E. T. Jones.—Underground Temperature at Oxford in the Year 1899, as determined by Five Platinum Resistance Thermometers: Dr. A. A. Rambaut, F.R.S.—On the Kinetic Accumulation of Stress, illustrated by the Theory of Impulsive Torsion: Prof. K. Pearson, F.R.S.—Lines of Induction in a Magnetic Field: Prof. Hele-Shaw, F.R.S., and A. Hay.—On the Spectroscopic Examination of Colour produced by Simultaneous Contrast: G. J. Burch, F.R.S.—An Experimental Investigation into the Flow of Marble: Dr. F. D. Adams and Dr. J. T. Nicolson.—A Criticism of the Young-Helmholtz Theory of Colour Perception: Dr. F. W. Edridge-Green.—And other Papers.

LINNEAN SOCIETY, at 8.—On some Scandinavian Crustacea: Dr. A. G. Ohlin.—The Subterranean Amphipoda of the British Islands: Chas. Chilton.—On certain Glands of Australian Earthworms: Miss Sweet.—Notes on Najas: Dr. A. B. Rendle.

ZOOLOGICAL SOCIETY, at 4.30.—The Gigantic Sloths of Patagonia: Prof. E. Ray Lankester, F.R.S.

ANATOMICAL SOCIETY (Owens College, Manchester), at 10.30.—Lantern Demonstration on the Comparative Anatomy and Histology of the True Cæcal Apex—the Appendix Vermiformis: Dr. R. J. Berry.—Lantern Demonstration of some Surface Markings of the Calvaria, and their Significance: Prof. Dixon.—Lantern Demonstration of Microphotographs of the Maturation Stages in the Ovum of Echinus: Dr. T. H. Bryce.—

Some Points in the Anatomy of the Digestive System: Prof. Birmingham.—(a) Two Cases of Absent Vermiform Appendix; (b) A Specimen showing Direct Continuity between the Long External Lateral Ligament of the Knee-joint and the Peroneus Longus Muscle; (c) A Supernumerary Bone in the Carpus connected with the Trapezium: Prof. Fawcett.—A Note on the Genital Apparatus of the Jerboa: Dr. Armour.

CHEMICAL SOCIETY, at 8.—Ballot for the Election of Fellows.—Notes on the Chemistry of Chlorophyll: Dr. L. Marchlewski and C. A. Schunck.—Researches on Morphine, I.: Dr. S. B. Schryver and F. H. Lees.—A New Series of Pentamethylene Derivatives, I.: Prof. W. H. Perkin, jun., F.R.S., Dr. J. F. Thorpe, and C. W. Walker.—Experiments on the Synthesis of Camphoric Acid. III. The Action of Sodium and Methyl Iodide on Ethyl-dimethyl-butanetricarboxylate: Prof. W. H. Perkin, jun., F.R.S., and Dr. J. F. Thorpe.—On the Oxime of Mesoxamide and some Allied Compounds: Miss M. A. Whiteley.—The Oxyphenoxy- and Phenyleneoxy-acetic Acids: W. Carter and Dr. W. T. Lawrence.—(1) The Condensation of Ethyl  $\alpha$ -Bromo-isobutyrate with Ethyl Malonates and Ethyl Cyanacetates:  $\alpha$ -Methyl- $\alpha$ -isobutylglutaric Acid; (2) Methylisoomylsuccinic Acid, II.: Dr. W. T. Lawrence.

FRIDAY, JUNE 22.

PHYSICAL SOCIETY, at 5.—Notes on Gas Thermometry: Dr. P. Chappuis.—A Comparison of Impure Platinum Thermometers: H. M. Tory.—On the Law of Cailletet and Mathias and the Critical Density: Prof. J. Young, F.R.S.

ANATOMICAL SOCIETY (Owens College, Manchester), at 10.30.—Note on the Configuration of the Heart in a Man and some other Mammalian Groups: Dr. C. J. Patten.—On the Arrangement of the Pelvic Fasciæ and their Relationship to the Levator Ani: Dr. Peter Thompson.—(a) A Preliminary Note on the Development of the Sternum; (b) Specimens of Diaphragmatic Hernia and of a Left Inferior Vena Cava: Prof. Paterson.—Preparations and Lantern Slides illustrating: (a) The Anatomy of the Subclavian and Axillary Arteries; (b) The Position and Relations of the Eustachian Tubes; (c) Stereoscopic Views of Anatomical Preparations: Dr. Arthur Robinson.—A Series of Microscopical Preparations illustrating the Development of the Posterior End of the Aorta: Prof. Young and Dr. Arthur Robinson.—Demonstration of a Series of Preparations of the Posterior End of the Adult Aorta: Prof. Young.

MONDAY, JUNE 25.

ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Results of the Sir George Newnes Antarctic Expedition: C. E. Borchgrevink.

TUESDAY, JUNE 26.

ROYAL PHOTOGRAPHIC SOCIETY, at 8.—The Selection of Lenses with regard to Photographic Perspective: J. H. Agar Baugh.—How to ascertain the Conjugates of a Lens without Calculation: Rev. F. C. Lambert.

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